

1 1. A substantially pure polypeptide comprising an  
2 amino acid sequence at least 60% identical to SEQ ID NO:2,  
3 wherein the polypeptide induces differentiation of an  
4 osteocyte.

1 2. The polypeptide of claim 1, wherein the amino  
2 acid sequence is at least 70% identical to SEQ ID NO:2.

1 3. The polypeptide of claim 1, wherein the amino  
2 acid sequence is at least 80% identical to SEQ ID NO:2.

1 4. The polypeptide of claim 1, wherein the amino  
2 acid sequence is at least 90% identical to SEQ ID NO:2.

1 5. A substantially pure polypeptide comprising SEQ  
2 ID NO:2.

1 6. The polypeptide of claim 5, wherein the  
2 polypeptide comprises SEQ ID NO:1.

1 7. A substantially pure polypeptide comprising the  
2 amino acid sequence of SEQ ID NO:2 containing up to 30  
3 conservative amino acid substitutions, wherein the  
4 polypeptide induces differentiation of an osteocyte.

1 8. A substantially pure polypeptide encoded by a  
2 first nucleic acid that hybridizes under stringent conditions  
3 to a second nucleic acid consisting of SEQ ID NO:3, wherein  
4 the polypeptide induces differentiation of an osteocyte.

1 9. An isolated nucleic acid encoding the polypeptide  
2 of claim 1.

- 1           10. An isolated nucleic acid encoding the  
2 polypeptide of claim 5.
- 1           11. An isolated nucleic acid encoding the  
2 polypeptide of claim 6.
- 1           12. An isolated nucleic acid encoding the  
2 polypeptide of claim 7.
- 1           13. An isolated nucleic acid comprising SEQ ID NO:3.
- 1           14. An isolated nucleic acid that hybridizes under  
2 stringent conditions to a single stranded nucleic acid  
3 consisting of SEQ ID NO:3.
- 1           15. The isolated nucleic acid of claim 14, wherein  
2 the nucleic acid encodes a polypeptide that induces  
3 differentiation of an osteocyte.
- 1           16. A vector comprising the nucleic acid of claim 9.
- 1           17. A vector comprising the nucleic acid of  
2 claim 10.
- 1           18. A vector comprising the nucleic acid of  
2 claim 11.
- 1           19. A vector comprising the nucleic acid of  
2 claim 12.
- 1           20. A vector comprising the nucleic acid of  
2 claim 13.

1 21. A vector comprising the nucleic acid of  
2 claim 14.

1 22. A host cell comprising the nucleic acid of  
2 claim 9.

1 23. A host cell comprising the nucleic acid of  
2 claim 10.

1 24. A host cell comprising the nucleic acid of  
2 claim 11.

1 25. A host cell comprising the nucleic acid of  
2 claim 12.

1 26. A host cell comprising the nucleic acid of  
2 claim 13.

1 27. A host cell comprising the nucleic acid of  
2 claim 14.

1 28. An antibody that specifically binds to the  
2 polypeptide of claim 1.

1 29. An antibody that specifically binds to the  
2 polypeptide of claim 5.

1 30. An antibody that specifically binds to the  
2 polypeptide of claim 8.

1 31. A method of screening for a compound that binds  
2 to a polypeptide, the method comprising

3 providing a polypeptide comprising an amino acid  
4 sequence at least 70% identical to SEQ ID NO:2;  
5 contacting a test compound with the polypeptide; and  
6 determining whether the test compound has bound to  
7 the polypeptide.

1 32. A method of screening for a compound that binds  
2 to a polypeptide, the method comprising

3 providing a polypeptide encoded by a first nucleic  
4 acid that hybridizes under stringent conditions to a second  
5 nucleic acid consisting of SEQ ID NO:3;  
6 contacting a test compound with the polypeptide; and  
7 determining whether the test compound has bound to  
8 the polypeptide.

1 33. A method of screening for a compound that  
2 induces osteocyte differentiation, the method comprising  
3 providing a polypeptide comprising an amino acid  
4 sequence at least 70% identical to SEQ ID NO:2;  
5 contacting a test compound with the polypeptide; and  
6 determining whether the ability of the polypeptide to  
7 induce osteocyte differentiation in the presence of the test  
8 compound is greater than in the absence of the test compound,  
9 wherein if the ability is greater, the test compound induces  
10 osteocyte differentiation.

1 34. A method of screening for a compound that  
2 induces osteocyte differentiation, the method comprising  
3 providing a polypeptide encoded by a first nucleic  
4 acid that hybridizes under stringent conditions to a second  
5 nucleic acid consisting of SEQ ID NO:3;  
6 contacting a test compound with the polypeptide; and

7 determining whether the ability of the polypeptide to  
8 induce osteocyte differentiation in the presence of the test  
9 compound is greater than in the absence of the test compound,  
10 wherein if the ability is greater, the test compound induces  
11 osteocyte differentiation.

1 35. A method of screening for a compound that  
2 inhibits osteocyte differentiation, the method comprising  
3 providing a polypeptide comprising an amino acid  
4 sequence at least 70% identical to SEQ ID NO:2;  
5 contacting a test compound with the polypeptide; and  
6 determining whether the ability of the polypeptide to  
7 induce osteocyte differentiation in the presence of the test  
8 compound is less than in the absence of the test compound,  
9 wherein if the ability is less, the test compound inhibits  
10 osteocyte differentiation.

1 36. A method of screening for a compound that  
2 inhibits osteocyte differentiation, the method comprising  
3 providing a polypeptide encoded by a first nucleic  
4 acid that hybridizes under stringent conditions to a second  
5 nucleic acid consisting of SEQ ID NO:3;  
6 contacting a test compound with the polypeptide; and  
7 determining whether the ability of the polypeptide to  
8 induce osteocyte differentiation in the presence of the test  
9 compound is less than in the absence of the test compound,  
10 wherein if the ability is less, the test compound inhibits  
11 osteocyte differentiation.

1 37. A compound that specifically binds to the  
2 polypeptide of claim 1.

1 38. The compound of claim 37, wherein the compound  
2 is an agonist or antagonist of the polypeptide.

1 39. A compound that specifically binds to the  
2 polypeptide of claim 5.

1 40. The compound of claim 39, wherein the compound  
2 is an agonist or antagonist of the polypeptide.